

In the claims:

Please amend the claims as follows:

1. (Currently Amended) A method of establishing a network connection, the method comprising:

establishing a connection across a first communication network that carries audio signals;

encoding a computer network address for a second network different from the first network into an encoded network address and sending the encoded network address across the first network;

using the network address that is sent over the first network to establish a network connection on the second network; and

maintaining the first connection across the first communication network while the second network connection is being established; and

providing encryption capabilities, wherein providing the encryption capabilities comprise encrypting the audio signal using an encryption key.

2. (Currently Amended) The method of claim 1, ~~where the first network comprises a voice telephone network.~~ further comprising:

transferring a secret key across at least one of the network connections; and

allowing network users to converse across the first communication network while encrypting and decrypting audio signals for each user.

3. (Currently Amended) A method of establishing a network connection, the method comprising:

establishing a connection across a first communication network that carries audio signals;

encoding a computer network address for a second network different from the first network into an encoded network address and sending the encoded network address across the first network, where the encoded network address is encoded using dual tone multi-frequency signals; and

using the network address that is sent over the first network to establish a network connection on the second network, where the first network comprises a voice telephone network; and

providing encryption capabilities, wherein providing the encryption capabilities comprise encrypting the audio signal using an encryption key.

4. (Previously Amended) A method of establishing a network connection, the method comprising:

establishing a connection across a first communication network that carries audio signals;

encoding a computer network address for a second network different from the first network into an encoded network address and sending the encoded network address across the first network, where the encoded network address is appended to telephone network signaling data; and

using the network address that is sent over the first network to establish a network connection on the second network.

5. (Currently Amended) The method of claim 1,
wherein the second network comprises an Internet, wherein the
computer network address comprises an Internet protocol address.

6. (Cancelled)

7. (Cancelled)

8. (Previously Amended) A method of establishing a
network connection, the method comprising:
establishing a connection across a first communication
network that carries audio signals;
encoding a computer network address for a second
network different from the first network into an encoded network
address and sending the encoded network address across the first
network;
using the network address that is sent over the first
network to establish a network connection on the second network;
receiving a stream of audio signals;
sending the audio signals through the connection
across the voice telephone network prior to said using said
network address to establish a network connection; and
sending the audio signals through the connection
across the computer network after said using said network
address to establish a network connection.

9. (Previously Amended) A method of establishing a
network connection, the method comprising:
establishing a connection across a first communication
network that carries audio signals;

encoding a computer network address for a second network different from the first network into an encoded network address and sending the encoded network address across the first network;

using the network address that is sent over the first network to establish a network connection on the second network;

receiving a stream of audio signals;

encrypting the audio signals using a first computer that is connected to the second network to form encrypted audio signals; and

sending the encrypted audio signals across the first network connection.

10. (Previously Amended) A method of establishing a network connection, the method comprising:

establishing a connection across a first communication network that carries audio signals;

encoding a computer network address for a second network different from the first network into an encoded network address and sending the encoded network address across the first network;

using the network address that is sent over the first network to establish a network connection on the second network;

transmitting an encryption key across the second network using the network connection;

encrypting an audio signal using the encryption key to form an encrypted audio signal; and

transmitting the encrypted audio signal across the first network.

11. (Cancelled)

12. (Currently Amended) A method of establishing a network connection, the method comprising:

establishing a first connection across a voice telephone network between a first location and a second location;

receiving an encoded network address at said second location, from the voice telephone network for a computer network that is different than the voice telephone network;

translating the encoded network address to a computer network address;

establishing a second connection between the first location and the second location across the computer network using the computer network address received from said voice telephone network; and

maintaining the first connection across the first communication network while the second network connection is being established; and

providing encryption capabilities and authentication capabilities, wherein the encryption capabilities comprise a cryptographic key for encrypting and decrypting information.

13. (Currently Amended) A computer program stored on a computer-readable medium, for establishing a network connection, the computer program including instructions operable to cause a computer to:

obtain a computer network address for a computer network;

send the computer network address across a second network different than the computer network;

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receive a network connection request to establish a network connection across the computer network, and using the computer network address sent across the ^{telephone} ~~second~~ network to establish the network connection sent over the ^{telephone} ~~second~~ network; and

support simultaneous network connections for the computer network and the ^{telephone} ~~second~~ network; and
provide encryption capabilities and authentication capabilities, wherein the encryption capabilities comprise a cryptographic key for encrypting and decrypting information.

14. (Cancelled)

15. (Original) A method of encrypting a voice conversation, the method comprising:

establishing a connection across a voice communication network between a first party and a second party;

establishing a connection across a computer network between the first party and the second party;

transmitting an encryption key across the computer network so that both said first and second parties have said encryption key;

encrypting an audio signal using the encryption key; and

transmitting the encrypted audio signal across the voice telephone network.

16. (Original) The method of claim 15, where establishing a connection across a computer network comprises:

encoding a computer network address into an encoded network address;

sending the encoded network address across the voice communication network; and

using the encoded network address to establish a connection across the computer network.

17. (Original) A computer program stored on a computer-readable medium, for encrypting a telephone conversation, the computer program including instructions operable to cause a computer to:

establish a first connection across a computer network between a first party and a second party;

transmit an encryption key across the computer network so that both said first and second parties have said encryption key;

encrypt an audio signal using the encryption key; and
transmit the encrypted audio signal across a voice communication network using a second connection between the first party and the second party.

18. (Original) A method of authenticating a telephone call between a calling telephone and a receiving telephone, the method comprising:

establishing a connection across a voice communication network between a calling telephone and a receiving telephone;

establishing a connection across a computer network between a calling computer and a receiving computer; and

verifying that the calling computer is coupled to the calling telephone by sending a signal from the receiving telephone to the calling telephone across the voice communication network and sending the signal from the calling computer to the receiving computer across the computer network.

19. (Original) The method of claim 18, further comprising authenticating the calling computer.

20. (Original) The method of claim 18, where verifying the caller's computer is coupled to the calling telephone comprises:

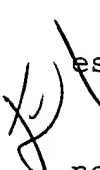
generating a random number;

sending the random number to the calling telephone across the voice telephone network;

receiving the encrypted random number at the receiving computer across the computer network;

decrypting the encrypted random number using a public cryptographic key; and

comparing the random number with the decrypted random number.

 21. (Original) The method of claim 18, where establishing a connection across a computer network comprises:
encoding a computer network address into an encoded network address;

sending the encoded network address across the voice telephone network; and

receiving a network connection request to establish a connection across the computer network, where the network connection request uses the computer network address.

22. (Original) The method of claim 18, where establishing a connection across a computer network comprises:
receiving an encoded network address across the voice telephone network;

translating the encoded network address to a computer network address; and

sending a network connection request to establish a connection across the computer network, where the network connection request uses the computer network address.

23. (Original) A method of authenticating a telephone call between a calling telephone and a receiving telephone, the method comprising:

establishing a connection across a voice communication network between a calling telephone and a receiving telephone;

establishing a connection across a computer network between a calling computer and a receiving computer; and

verifying that the receiving computer is coupled to the receiving telephone by sending a signal from the calling telephone to the receiving telephone across the voice communication network and sending the signal from the receiving computer to the calling computer across the computer network.

24. (Original) A computer program stored on a computer-readable medium, for authenticating a telephone call between a calling telephone and a receiving telephone, the computer program including instructions operable to cause a computer to:

establish a connection across a computer network between a calling computer and a receiving computer; and

verify the calling computer is coupled to a calling telephone using both a voice telephone network and the computer network.

25. (Original) A crossbar switch, comprising:

a switch including at least one analog input port, at least one digital input port, at least one analog output port, at least one digital output port, and a processor which generates digital signals based upon analog signals received at said at least one analog input port;

at least one analog input channel which receives an audio signal, where each analog input channel is coupled to a corresponding analog input port of the switch;

at least one digital input channel, where each digital input channel is coupled to a corresponding digital input port of the switch;

at least one analog output channel, where each analog output channel is coupled to a corresponding analog output port of the switch;

at least one digital output channel, where each digital output channel is coupled to a corresponding digital output port of the switch; and

a control element coupled to the switch,

where the control element is adapted to control which of the analog input ports, digital input ports, analog output ports, and digital output ports are active,

where an active input port sends a signal received at the input port from a coupled channel into the switch, and an active output port sends a signal from within the switch to a coupled channel, allowing a signal received at any input port of the switch to be sent to one or more channels coupled to corresponding output ports of the switch.

26. (Original) An audio crossbar switch, comprising a plurality of input ports, where one input port is coupled to an audio source;

a plurality of output ports, where one output port is coupled to a telephone network, and one output port is coupled to a computer network; and

a control element which physically connects at least one input port to at least one output port and can dynamically change which input port is coupled to which output port.

27. (Original) The audio crossbar switch of claim 26, where the audio source is a telephone.

28. (Original) The audio crossbar switch of claim 26, where the control element can change a connection between the audio source and the telephone network to a connection between the audio source and the computer network without terminating a telephone conversation occurring through the connection between the audio source and the telephone network.

29. (Original) An audio crossbar switch, comprising:
an audio input port for receiving an audio signal;
a plurality of output ports, where one output port is coupled to a telephone network, one output port is coupled to a computer network, and one output port is coupled to a computer;
and

a control element, where the control element is adapted to control and switch in real-time which one or more of the output ports the audio signal transmits the audio signal.

30. (Cancelled)